

What is claimed is:

1. A method of producing a composite soft magnetic material having high strength and high specific resistance, the method comprising the steps of:

heating at a temperature of 60 to 110 °C mixture powder comprising

0.05 to 1 wt% of polyimide resin powder having an average particle diameter of 1 to 100 μm ,

0.002 to 0.1 wt% of fine amide-based wax powder having an average particle diameter of 1 to 20 μm , and

the balance composed of insulating film-coated soft magnetic powder obtained by forming an insulating film on the surface of soft magnetic powder;

filling the heated mixture powder in a mold which is heated at a temperature of 100 to 150 °C;

compression-molding the heated mixture powder at a molding pressure of 700 to 1200 MPa to obtain a compact; and

curing the obtained compact at a temperature of 225 to 300 °C.

2. The method of claim 1, wherein the insulating film-coated soft magnetic powder is phosphate film-coated iron powder

obtained by forming a phosphate film on the surface of pure iron powder.

3. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 1.

4. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 2.

5. The method of claim 1, wherein the polyimide resin powder comprises wholly aromatic polyimide resin powder or bismaleide-based polyimide resin powder or both.

6. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 5.

7. The method of claim 1, wherein the average particle diameter of the polyimide resin powder is 10 to 80 μm .

8. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 7.

9. The method of claim 1, wherein the average particle diameter of the polyimide resin powder is 10 to 50 μm .

10. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 9.

11. The method of claim 1, wherein the amount of the polyimide resin powder in the mixture powder is 0.1 to 0.5 wt%.

12. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 11.

13. The method of claim 1, wherein the amount of the fine amide-based wax powder in the mixture powder is 0.004 to 0.05 wt%.

14. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 13.

15. The method of claim 1, wherein the average particle diameter of the fine amide-based wax powder is 1 to 10 μm .

16. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 15.

17. The method of claim 1, wherein the fine amide-based wax powder is ethylenebisstearoamide, ethylenebislauramide, or methylenebisstearoid, or a mixture thereof.

18. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 17.

19. The method of claim 1, wherein the compact is cured for 30 to 60 minutes.

20. A composite soft magnetic material having high strength and high specific resistance, produced by the method of claim 19.